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EDITORIAL



Mr. J. M. Martin Retires

Our esteemed friend, Jack Martin, retires from office as Assistant Director General (Wireless) this month. It is fitting therefore that we should pay tribute to the man who has been a true friend to every law-abiding Amateur, and a kindly and tolerant judge whenever a transgressor has been apprehended.

Mr. Martin commenced his long association with the radio communiication field in the United Kingdom in 1896 and served for some years as amarine operator before he was brought to Australia by the Commonwealth Government in 1912 in connection with the foundation of the Australia Coastal Radio Service.

After serving as officer-in-charge of various constal stations through-off various constal stations through-quild for the constant of the constant of the constant of the constant of the pomain, Mr. Martin joined the staff of the Wireless Branch of the Postmaster-General's Department where he rose to his present position of Assistant Director General (Wireless).

Mr. Martin has played a leading part in the development of broadcasting and radio communication in Australia and on several occasions has represented the Commonwealth at important International Telecommunication Conferences. Throughout his official career, Mr. Martin has always proved a most able administrator and has earned the respect of all for his outstanding honesty of purpose.

Jack Martin has always been keenly interested in the welfare of Amsteurs, and from the very inception of the Wireless Institute (Victoria) in 1910 has maintained a close Ilsison with this Institute—in Federal Executive knows of no other person more capable of writing the history of the Institute than Jack Martin, maybe we can induce him to undertake the task to wile away his lesiume hours after his retirement!

Mr. Martin's farsightedness in recognising the true public worth of the Amateur, both in peace time and war, has won for him a place in the hearts of all. We take this opportunity of passing on to him the very best 78's. May his days of retirement be filled with happy memories of his associations with us and may be carry with him always the appreciation and esteem of the Amateurs of Australia.

FEDERAL EXECUTIVE.

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MELBOURNE

Central 4311 Amateur Radio, September, 1951

"How's My Modulation O.M.?"

BY J. DUNCAN,* VK3VZ, AND LEN JACKSON†

· Every Amateur has heard the above question asked many times on our bands, and with it is the admittal that adequate means of knowing the depth of modulation does not exist at that station, therefore apart from the fact that the regulations are not being adhered to, the operator is not obtaining the maximum efficiency from his transmission because only by correctly modulating his carrier can he use his equipment to its best advantage.

With the installation of the new VK3WI in the Victorian Division's Rooms, and the fact that it would be operated by about twelve pairs of Amateurs on a roster system, a simple and effective means of indicating modulation depth was urgently required.

It fell to the writers to design and build a suitable indicator, which would be supplementary to the phone monitor which keeps an adequate check on

speech quality. It was felt that any modulation indi-

cator which uses a meter would be too heavily damped in its movement to show the peaks which cause overmodulation and its attendant splatter, so a c.r.o. indicator was decided upon as it is instantaneous in its action.

Finally it was necessary to decide which modulation figure, trapezoidal or envelope, would be best. We came to the conclusion that both patterns had their respective advantages, and there-fore decided to make either one available at the flick of a switch. After much experimenting, a simple indicator was built and is now giving very satisfactory operation at VK3WI.



Fig. 1 shows the schematic diagram P.T. is an old power transformer taken from the junk box, a relic of the days when filaments were 2.5 volts. By using one 2.5v. winding in series with half one 2.5v. winding in series with half the second 2.5v. winding, 3.75 volts was available for the VCR139A c.r. tube. The 5 volt winding being used for the 5Y4G rectifier. The secondary was 385v. aside, and in our case only one half of the winding was used. However, if the intensity is not enough, use the 385v. windings in series. Two 8 uF, 600 volt electrolytic condensers are series con-nected, and the bleeder consists of a 2 meg. resistor and the focus and intensity

Connections to the VCR139A are quite conventional, except for the 0.5 meg, resistor in series with the intensity control. A relay contact is provided in the cathode lead of the VCR139A to remove the trace and prevent the screen being damaged when receiving

Two deflector plates and the No. 2 anode are tied together and grounded. whilst the r.f. is applied to the vertical plate via the 2,000 ohm wire wound potentiometer. It was found that carbon pots did not stand up to the r.f. and the wire wound worked excellently. In the case of VK3WI, a one-turn link is loosely coupled to the antenna tuning coil, although a single wire near the

coil, although a single wire near the feeders serves quite well.

The horizontal sweep for the envelope pattern is obtained by using 50 cycles to the horizontal plate and blanking out the return trace by applying a negative

pulse to the grid.

The a.c. 50 cycle voltage is picked off the junction of the 1 and 2 meg. resistors across the power transformer secondary. across the power transcoluser securious, and applied to the 1 meg. potentiometer. When S2B is in position B, this voltage is applied to the horizontal plate of the c.r. tube. At the same time, S2A applies a.c. to the grid of the c.r.o. tube via the 500 pF. condenser, thereby blanking out the return trace. This gives a linear sweep over portion of the full a.c. cycle. If the 500 pF. capacity is too large, the intensity control will not function, so choose a value which will give normal operation of the intensity and focussing controls.

When switched to position A, S2A grounds this condenser, and the second switch section swings the horizontal plate to a terminal on the rear of the unit to receive audio from the modulator. It is most important that the 0.001 uF. r.f. by-pass on the horizontal plate of the c.r. tube be located on the tube base, otherwise the r.f. envelope will not be vertical, but will tilt to one side due to r.f. leaking into the horizontal plate of the cr. tube. Watch this point carefully.

It will be noted that the horizontal gain control does not operate when the trapezoidal pattern is being viewed, this is not a mistake in the drawing, but was found necessary to avoid a variable audio phase shift as the potentiometer was varied, which brings us to a very important point with regard to the tapping of the audio from the modulator.

TAPPING OF AUDIO FROM THE MODULATOR

The following section of the description is treated rather fully, as much trouble was experienced here and reference to the standard textbooks failed to produce any help. This information is therefore furnished in the hope that it may benefit others who have experienced similar trouble.

The circuit first used for connection to the modulator was as shown in Fig. 2B, but without the condensers C1 and The 0.005 uF. condenser was connected as shown, rather than as in Fig. 2A, to enable a condenser of lower voltage rating to be used. However, a correct pattern could not be obtained on the screen, the sides of the trape-zoid figure being elliptical instead of zoid figure being elliptical instead or straight. This type of pattern is shown in the A.R.R.L. Handbook as occurring when the audio voltage is taken from a stage in the modulator other than the

It was reasoned correctly that this was due to a phase shift in the audio coupling network, but the reason was at first a little obscure. The 0.005 uF. condenser was at first suspected, but increasing this to as large as 1 uF, made no difference. Next the circuit was altered to that shown in Fig. 2A, but again without CI and C2. This is the circuit generally given in the text books. However, results were still the



The next point of attack was the 0.001 dF. r.f. by-pass on the horizontal plate of the c.r. tube. Here more promising results were obtained. This by-pass was gradually reduced in value, and each time an improvement in the pattern was obtained, although some small phase shift was obtained even with this by-pass eliminated altogether. Also, as the by-pass was reduced, the envelope pattern started to lean heavily to one side, and the smallest value that could be tolerated from this aspect was 0.0001 uF, which still gave a large phase shift on the trapezoid pattern. Therefore another line of attack was decided on

If the by-pass from the horizontal plate to earth produced a phase shift, why not connect another condenser from the horizontal plate to the full modulator output, across the upper half of the resistance voltage divider, and thereby produce an equal and opposite phase shift, the two then cancelling?

This was tried with an immediate improvement in results. The circuit of Fig. 2A was first tried, the compensating condenser being split into two equal series condensers C1 and C2, since a single condenser of adequate voltage rating (2,000v.) was not available. With rating (2,000v.) was not available. With a little experiment in the values, the phase shift was completely eliminated. However, immediately the horizontal gain control was shifted, the phase shift re-appeared, so the circuit was changed, as mentioned earlier, to remove this control from the circuit on the trapezoid

The only point which still caused us worry now was the 0.005 uF, condenser, worry now was the 0.000 UF. contenser. This was only of 1,200v. rating, which was not high enough for the circuit of Fig. 2A, with 1,000 volts d.c., on the line, and a 2,000v. condenser, the lowest rating acceptable, was not available. So (Continued on Page 5)

^{*} Technical Editor, 23 Parkside Avenue, Balwyn, Vic. † 8 Austin Street, Bentleigh, S.E.14, Vic.

TELEVISION MADE EASY-Part 1

RV JOHN JARMAN* VK3ADA

When television is established in Australia, will your rig interfere with television reception, Will you be able to prevent such interference? If a neighbour complains of such interfer-ence, will you be able to prove your rig "innocent," and help the complain-ant to locate the source of the trouble? No matter how we attempt to answer questions we seem to always reach the same conclusion, namely, that some knewledge of the operating principles of television is essential to every

Fortunately, there are now many good courses of study, on this subject, now available in Australia; some by correspondence, and other in serial form in current magazines, so we need not be "left in the dark."

However, for the benefit of the Ham, who cannot conveniently undertake a full course of training, we shall endeavour, in this series of articles, to outline the general principles of television, in simple language, dealing only with the aspects of the subject that directly concern the Ham or, to be more exact, we shall cover only the main facts that one needs to know, in order to help prevent interference to television reception.

(a) Line of Picture. (b) Corresponding Signal

First of all how does a television set work? Well, as some of us have guessed, at the transmitting end there is a television camera, which takes photos con-tinuously like a movie camera. This

guess is quite correct and, furthermore, these photos, which are taken at the rate of 25 per second, are transmitted by radio in succession

At the receiving end these photos are received and flashed on the screen of our television set in correct sequence and because of the persistence of vision, the illusion of movement is conveyed. In other words, we are actually watching a lot of snapshots, one after the other, but because our eyes can't keep up with the rapid changing of the pictures, we think that the objects in them are moving. The sound, of course, is conveyed in the same way as in ordin-

ary broadcasting.

Now how can photos be transmitted by radio? Well now we're getting "fair-dinkum." Before reading the anrain-dinkum." Before reading the answer, try this simple experiment. Take an old photo (e.g. the YL that "done you wrong") and cut it into a number of fine horizontal strips. Now examine one of these strips; it should look like Fig. 1a, consisting of a series of light and dark strokes, placed end to end.

*A11426 L.A.C. Jarman, J.B., c/o. S./L. Garden, Box 1424H, G.P.O., Adelaide. John has recently been moved to VK5 and his new call sign is not available.

· It is with pleasure that we are able to give readers a series of articles on Television by 3ADA. The following is an outline of the programme:-

Part i. Introduction.

li. How the Television Camera Works. iii. What's in a Television

Signal iv. What's in a Television Re-

coiver v. Further Notes on Receivers.

vi. The Receiver Synchronisation Circuit.

vii. The "Carrier-Difference" System.

viii. Interference, and How the ix. Outline of Color Television.

Now place a number of these strips Now place a number of these strips end to end. Our photo has now been transformed into nothing but a long series of light and dark strokes of varying length; yet, if we care to plece these strips together in their original order, we would have our photo again. But what on earth has this got to do

with television? Quite a lot. Just as we cut our photo into strips, and placed them end to end, the television camera splits each photo into 625 horizontal lines, and transmits them as a series of ines, and transmits them as a series or electrical impulses, something like dots and dashes. Commencing at the top left-hand corner of each photo, the camera "mechanism" converts the first line into a "burst" of pulsating d.c., as shown in Fig. 1b. Note that the brighter the portion of the strip, the higher will be the output of the camera. Study Fig. 1 carefully, before reading any

further.
This process of converting a picture into electrical impulses in correct sequence is called "scanning," and the sequence is the same as reading a printed page. In other words, the camera scans each line from left to right, and



(a) Cathode Ray Tube. (b) "Saw-Tooth" Current.

operates from the top of the picture downwards.

It is this output from the camera that modulates the transmitter, and which but how is it turned back into a picture? Well, just as we pieced the strips to-gether to make up our orginal photo,

the receiver, by means of a moving spot of light, reproduces each line, and re-assembles them in their correct order. thus reproducing the original photo; but what am I saying! This is still "clear as mud!"

Now let's do a little more practical work. Take an electric torch, preferably of the focussing type, into a dark room and shine it on the distant wall. We see a spot of light. Now wave this torch see a spot of ignt. Now wave this torch to and fro, so that the spot moves hor-izontally across the wall. Now wave the torch very rapidly, still endeavouring to keep the movement horizontal We now see not a spot, but a continuous line of light on the wall. Now what we're actually watching is still a rapidly moving spot, but it appears as a line for two reasons. Firstly, because the spot is tracing out the same path over and over again, and secondly, because its movement is so rapid that our eyes can't keep up with it. Stretching the imagination a little, suppose the torch could be switched on

and off quickly, while being waved. The "line" would no longer appear continuous, but broken, as shown in Fig. 1a. But we have already shown that Fig. la represents a strip of the original

picture

Yeah man! We have actually figured out how a single line of our picture, after reaching the receiver as a stream of electrical impulses, can be converted back into a visible "strip of picture" by a moving beam of light; but how can a lot of these strips be re-assembled, to form the picture?

To answer this, let us review the operation of the cathode ray tube. Having focussed the beam of this tube to produce a fine bright spot of light on the screen, by passing a saw-tooth current through the appropriate deflection coils, we can make the spot move to and fro across the screen, and appear as a horizontal line.

If the current has the wave form shown in Fig. 2b, the spot will move comparatively slowly from left to right, then rapidly back to its starting point, and continue this movement as long as the current is flowing. Now, through the other deflection

coils, we shall pass a similar current at a lower frequency, which will tend to make the spot travel slowly from top to base of screen, and rapidly back again.

By passing both currents through their respective coils simultaneously we can make the spot trace out a zig-zag pattern, as in Fig. 3a. Just as the spot, produced on the wall by our torch, made a continuous line, the spot on our c.r.t. screen is producing a number of parallel lines. Now consider the frequency of the current, which is causing the horizontal deflection of the beam. By increasing this, we can increase the number of lines on the screen, thereby bringing them closer together, until ultimately, the spaces between them will be so fine, that instead of lines, we shall see a rectangular patch of light on the screen, as shown in Fig. 3b.

Let us now vary the intensity of the spot (just as we tried to switch our torch on and off while waving it). This can be done quite easily by varying the voltage on the grid of our cathode ray





Fig. 3.

(a) Movement of Spot on Rx Screen.
(b) In each picture, spot traces out 625 lines. Only the "left-to-right" movements of spot are visible.

Each line on the screen will no longer appear continuous, but broken, as in Fig. 1s. Suppose we connect this grid in Fig. 1s. Suppose we connect this grid make the apot to the form shown in Fig. 1b and each increase in voltage will make the apot brighter, and each decreen will appear as in Fig. 1s. In other words, each line of the original picture can be reproduced on the resignal to modulate a rapidly moving electron beam, as it traces out the line pattern, shown in Fig. 3.

Yes, we're beginning to see daylight. Those who are not familiar with the cathode ray tube may find it helpful to study its theory of operation from any suitable text book, since space won't permit it to be covered in this series.

To sum up, the television camera takes photos continuously, at the rate of 25 per second. Each of these photos is split into 625 horizontal lines. Each of these lines is transmitted as a stream of electrical impulses, corresponding to the light and dark parts of the picture.

In the receiver, a spot of light is made to trace out, on the screen, the same number of horizontal parallel lines as contained in the original picture.

By modulating the electron beam, which produces this spot, by the received television signal, we reproduce the original lines of the picture.

Note that what one actually looks at on the television screen, is nothing more than a rapidly moving spot of light, but the arrival of the property of the pro

Fig. 4 shows the essential parts of a television receiver and to round off this "burst" here's a few technical tit-bits which will be dealt with in detail in later articles.

To keep picture steady on the screen receiver must be grack-noised with transmitter; that is, receiver must commence reproducing each line at the same instant that the transmitter commenced in the same instant that the transmitter commenced synchronizing signal, and each complete picture, by a synchronizing signal of a different type, synchronized signal of a different type, the other. The transmitter could be compared with a good expension—and, calling "left-right-left" when it inserts mission, and all receivers, tuned into the programme, like well-disciplined troops, keep "in steps" with the camera.



Fig. 4.-Basic Television Receiver.

All modern systems use "interlaced scanning," which simply means that each picture is exampled in two stages, camera scans all the odd lines, such as 1, 3, 5, etc., and in the second stage, all the even lines, 24, 6, 8, thus completing the picture. The purpose is to double for the stage of the second stage, all for the second stage, all for even lines, 24, 6, 8, thus completing from story that the second stage, all for even the second stage, and without increasing the modulating frequency (which, by the way, extends from 50 cycles to 5 McL as will learn plete pictures per second, therefore, we handle 50 "half-picturers" as it were.

The proposed Australian system will use "negative modulation" which means that an increase in carried amplitude represents a decrease in picture brightness. The greater the amplitude, the darker the picture, as illustrated in Fig. 5.

The proposed carrier frequencies for use in Australia will extend from 180 to 204 Mc.

So much for the general outline of television. Still "clear as mud?" Don't be afraid to admit it, because this is how television theory strikes everybody at first, but belleve it or not, after reading through this article several times, you'll find it's actualty quite simple.



Fig. 5. Modulation Pattern of Television Signal.

Furthermore, I would like to encourage the reader to submit all queries concerning television, by post, to will be promptly made out in duplicate, one copy submitted to this magazine, one copy submitted to this magazine, but the submitted to the submitted to the television of the submitted to ask, better that tellow readers may benefit, and the other copy mailed to the inquirer direct poor to granted to ask, better that the control of the submitted to the submitted that the submitted

"How's My Modulation O.M.?" (Continued from Page 3)

the circuit was altered again to that of Fig. 2B, which requires only a rating on this condenser of 500v. min., and with some slight adjustment to the values of C1 and C2, everything worked perfectly. These condensers were made 0.0001 uE. each, and 1,000v. rating. Thus the two in series gave us 50 pF. at 2,000v.

If for any reason the values of the resistors in the voltage divide network resistors. The voltage divide network resistors are resistors and resistors are resistors and resistors are resistors. For example, the confidence network, formed by Cl the 0.001 uF, by-pass in the lower half, must have approximately the same ratio must have approximately the same ratio being realised that the lower half of the resistance network is formed by the 0.5 mag, input resistor to the indicator in half of the network.

Summarising: Build the Modulation Indicator as shown. Wire in the modulator divider as shown in Fig. 2A or 2B, but without CI or C2. Set the value of our window CI or C3. Set the value of one of the case of the

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At present the accent is again on high fidelity audio reproduction, and with the advent of a wide range disc and tape recording, together with pick-ups and speakers, better class equipment is required to fully utilise these wide range components. Aware of these requirements, we have, for quite some time, been manufacturing wide frequency range

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ADDITIONS VK- New South Wales 2JS-R. W. Zarierbrook, 9 Barkers Rd., Strathfield.

—W. A. Stirling, 9 Vera Street, Corowa.

E.-R. A. J. Taylor, Boundary St., Begs.

W.-J. A. Hampel, 563 Radium St., Broke

3GP-R. C. Steele, Flat 6, 181 Brighton Road.

sham. SAGK—G. E. Archibald, 28 Hilltop Av., Glen Iris

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Applicants should be fully qualified and possess a Commercial Operator's Certificate or have equivalent service experience together with wide experience in operation and maintenance of ground installations.

They will be required to operate Wireless Telegraphy apparatus at the Australian Scientific Station at Heard or Macquarie Islands.

Salary range £692 to £728 plus special hardship allowance. Period of stay approximately twelve months.

Applicants should be young. healthy and interested in outdoor activities such as walking, ski-ing and mountaineering, etc.

Full details on application to the Secretary, Antarctic Division, Department of External Affairs, Albert Park Barracks, Albert Park, St. Kilda, Melbourne, Victoria,

3ALN-A, S. W. Taylor, Government Aerodrome. Mangalore. 2AWJ-D. J. Williams, 6 Scotia St., Preston, N.18

4FT-J. A. Weddell, 188 Ekibin Rd., Annericy.

Gardens, L. S. Gurr, 21 Osmond St., St. Leonards, SEC.—R. S. Gurr, 21 Osmond St., St. Leonards, Glensig, STG-F. H. Taylor, 11s Mariborough Av., Wood-ville Park, Kilkenay. STS—A. C. Styles, But Tib, R.A.A.F. Station, Darwin, N.T. SWQ—C. C. Quin, Precling.

Western Australia
6AT-A. T. Hanson, 35 Joyce St., Scarborough,
Perih.

9XK-S. R. Coleston, Lighthouse Depot, Sam-arai, T.N.C.

ATTEMATIONS
TYPE—I WINDOWS STORY STO ALTERATIONS

3CT-18 Harrison Street, Ringwood. 3JQ-O.T.C.A. Wireless Station, Fiskville, vis Ballan.

JT.—"Linden Court." 20 Mason St., Rawthorn.

NG-166 Como Parade. Menione.

NR-186 Berram Street, Menione.

PR-81 McCartin Street, Leongatha.

QK-415 St. Kilda Street, Elwood.

SiQ-Luckie Street, Nunawading.

WR-C/o. Mission to Seamen. Beach, Port

4BJ-48 Lamb Street, Bundaberg, 4EW-08 Kerry Road, Archerfield, via Cooper's 4CW-01 Kerry Road, Archerfield, via Cooper's

Plains
3—Cr. Daky and Davidson Sts., Wynnum, E.1.
—103 Stoneleigh Street, Windsor,
C-Brown Pde., Oakleigh, via Ashgrove
Brisbane. Brisbane. 4ST-Dunbar Street, Woody Point.

48T.—Dunbar Streel, Woody Point.

585th Asterlia

5FJ.—15 Montacute Rd., Campbellfown, Adelaide

5GV7—96 Kitlel Street, Whyalia,

5LZ.—18 Lymmouth Avenue, Brighton Park,

5LZ.—19 Lymmouth Avenue, Brighton Park,

5LZ.—10 Old Beach Rd., Brighton, Adelaide,

5RR—33th Torren's Road, Kilkenny.

Western Australia
6CD-536 River View Ter., Mt. Picasant, Perth
6GK-138 Wittenoom Street, Collic
6GK-138 Wittenoom Street, Collic
6GW-15 Lilly Street, South Fremantic.
6GV-C/c. Radio Station 6VA, Narrogen.

7CL-3 Midwood Street, New Town. 7MA-Storeys Creek, via Avoca.

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DX NOTES BY VK4OL

Mind the noise completed and have received more fruits gate. The way was a first gate, and the state of the s

ervey of the bands is as follows, stations ked being shown ". is Mc.: Both TRK and myself found this is the same. All signals well down and or noisy. The only strong signals here the VKSs on the North Coast. SW Sinds or noise too high for him to do much on band.

has band.

7 Mo.: Not much to report in the way of consistency from snybody. TMK hears N. Americans
hat, as they are well down in strength when
heay do get through, except for one nighth
produced streng signals, and the same
high produced streng signals, and the same
or this bond has been the appearance of South
mericans. IDO worked LUECQ at 6809 G.M.T.



and the works DDVF and a VKL work GRI in

the works DDVF and a VKL work GRI in

the property of the property o

28 Me.: This band looks as though it has "had it" at the present time. Anytims I or TRK distened, there was nothing worth worrying ON4QF was operating the 7B4QF that some were lucky enough to fasten on to. He was regreating from Andorra, as he said he was attempting to tsee "A.R." notes for Jan.). He to now back in ON4 again, having been heard to mow back in ON4 again, having been heard

this month.

ACX has now worked 218 countries, with the countries of the country of the country

(3) copying adulty, (4) ludgment and courtery, QSLs for the menth are: OQSL, LOSKAA, KG4AD, FOSAC, KXESI, FXSSAD, FFSAC VQGCW, For 7 Mc: VQCCW, ZSSLZ, HASSA ZSSOS, 4X4BX, ZSSBB, ZSSXC, OXISK, bring-ing confirmations to 119. My thanks to all who have supplied material for this month.

Cheers until next month.—Fit./Lt. F. T. Hine to. 13 (G.R.) Squadron, R.A.A.F., Townsville.

IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS

SEPTEMBER, 1951

The accompanying charts have been prepared by the Ionospheric Prediction Service of the three three prepared in the prepared prepared to the series was published in the November. 1949, issue of this magazine, together with an article explaining the nature of the forecasts and how the testing of the forecasts and how the prepared to the prepared to the service of the Scatterian Prepared to the Scatterian States. The remainder, prefixed by the letter "Pr for Perth, are for Western Australia."

The Canberra charts refer to the following



London Cairo San Francisco New York

The forecasts have actually been prepared for point-to-point circuits between Canberra and the overness terminals mentioned in the shove table. It is, however, to be expected that the table in the conditions for all deviating con-tacts from South Eastern Australia to the various world sones.

The Perth charts are similar to those based on Canberra. No forecasts are given from Perth so chart P-28 would be essentially similar to chart P-18 would be essentially similar to chart P-18 while chart P-24 might be unreliable due to auroral activity in high northern islimées.

USE OF CHARTS

All that is necessary in the charts it:

All that is necessary in the biblio is period
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Sent at time is the child in period
amateur band frequency in L.J. of the F region
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onsatt both the short-route (S.R.) chart and
the following long-route (L.R.) chart.

The Prediction Service welcomes comment on the accuracy of its predictions. These should be forwarded through the W.I.A.



FIFTY MEGACYCLES AND ABOVE

Compiled by J. K. RIDGWAY, VK3CR

NEW SOUTH WALES This month interest has centred on 144 Mc owing to the Contest which took the few remaining 50 Mc, stations to the higher band. No openings have been reported on 50 Mc, so for this month there will be no 50 Mc news.

openings, have been reported on the Mr. on the control of the Mr. on, but the new three over three about we matters. Cee is keeping daily skeds 2ANF on 164 Mc, at 1815, so anyone if at that time should keep a look out

for Cec. 2ADT made very few contacts as condition were not so kind as they were last year. It managed to work 2ANU again and seems receive signals from that direction will eas nive signals from that direction with liongong stations were said to be active the Contest, but no trace of them was h

50 Mc. Call



2HI. created considerable interest with nu-trip to Bathurst and back, surveying the loca-tions for a proposed field day with the Guides-ville Club. Unfortunately Horrie's Tx was not Saturday, 2HL proceeded to the Blue Moun-tains and at the same time 2ANF proceeded to Kurnajong, TLZ, at Wentworth Falls, gro-confacts, but unfortunately 2ANF and 2HL were unable to make contact over the difficult path from Mt. Boyre to Panorama Point at Kurnajong Heighta. The main object of the text was to find out whether this path was

workshin.

Saturday night 2HL went to Mt. Penorama
Bathurat, taking Trevor 2MS as passenger The
Bathurat, taking Trevor 2MS as passenger The
nountains if possible. This path has been
worked on 30 Mc. The only result of the ter
worked on 30 Mc. The only result of the ter
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worked on 50 Mc. The only result
stations from Mt. Boyes and then laker durin
mobile work from the mountains home to

mobile work from the mountains nome in Sydney Sydn

A number or the country chaps are pix rather large sums for ASY receivers IAR Whilst it is good to see them taking an init in the band, the general Jeeling amongst Sydney chaps is that the old ASY received do more harm than good. Certainly, No Jornance will not reach the standard requ to work long distances over difficult cour s are seatured in "gos" and other; is as well as the various handbe using triodes are to be preferred t of their lower noise content.

account of their lower noise content. The July meeting of the VR.F. Group was well attended. Bill 2840 brought about his new procedure in calculating the dimensions of the flast strip lines used in the linesr tenk circuit. Subsequent test run on that tenk aboved a twin round lines as featured in his "A.E." article "100 Watts on 148 Mc." article '100 Watts on 166 Mc'. It was announced at this meeting that the Sunday night 2WI broadcasts will in future take place at '130 p.m. which is one half on appointed to handle the proposed whit, link to country districts and information regarding country v h.f. stations. If you live in the country and have v h.f. seer the V.H.P. Group

on the forms, Cec's 200w 200v, petrol elec. act. 2120 has succeeded in putting out a signal as far as 12X at Statefand and as considerably better of a signal as far as 12X at Statefand and as considerably better of a helice 2DF has two lighthouse labers in a cavity resonator and his signal in the petrol of the signal and the signal as the signal and the signal and the signal and signal as the signal and signal and signal and signal as the signal and signal and signal as the signal as the

With all the new stations starting on 576 VICTORIAN 576 Mc CONTEST BULES

1. Any licenced station may participate in his Contest, but prizes will be awarded to this Conlect, but prizes will be ensured.

**LA members only.

2. The period of the Conlect will be from 1st
Sept. 1801, to 30th Nov. 1851, inclusive.

3. Logs, showing date, time, station worked, location (borns or portable), signal reports ex-

changed, distance, and points claimed, must be signed by the operator and returned to the Secretary of the Group not later than 7th December, 1951. Winners will be announced and being distributed at the Documber meeting.

A. Only one contact with any estation of
ar thin Cowlest unless either or both raised
are the Cowlest unless either or both raised
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portable. Reverver, are unlimited number
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and the company of Up to 15 miles

15 miles and 35 ? Prizes will be awarded to the four higher toring stations; the first prize being a pair of

VICTORIAN V.H F GROLP NOTES

Next Group meeting is on Wednesday, 19th September at the Rooma Linten to 3WI broadcasts for details of the evening's activities. A the July meeting, Harry Chapman SGU, presented a very interesting and informative darcourse on antennae. Figures of theoretical gain incipations of the Section Linear to TVV product to Jay Section Lawry Chicago Mary Charles and Chicago Section Lawry Chicago Mary Chica

SOUTH AUSTRALIA

Main band of activity to report is on 389 Mc. where 28 stations are active. This band is occurwhere 28 stations are active. This band is occurup to 32 cleanest are in voyer. A full list of call signs is not available, but amongst them On 168 Mc. 394 Wilston, using a unity coupled one to dipole has been heard by 504 but could not beld kin been been heard by 504 but could not beld kin been been been been of 164. His 50 Mc. Stationary of 164. His 50 Mc.

SID has built a YLLS over for 288. On 60 Me. YC has good signal but only tains 40 meter was 50 meters. On the control of the about it chaps? SCF heard on occasionally working crossband 288-50 Mc. SCU threatens to come back on 50 Mc., so far no sign of Cliff SGA has 6A6 working nicely now as a harmonic xtal osc.

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FEDERAL, QSL, and DIVISIONAL NOTES



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Secretary: David H. Duff (VK1EO), Box 1734 G.P.O. Sydney Meeting Night: Fourth Friday of each month at Science House, Corner Gloucester and Essex

Divisional Sub-Editor: Don B. Knock, VK2NO, 43 Yanko Avenue, Waverley, Sydney.

43 Yanko Avenue, Waveley, Sydany,
Zane Cirraspondens North Ceast and Table-lands: Woel Hanson, VKRAHIH, Ryin Ave.
Well Kompen, Newwester, Bonn McD. Sulfate
Well Kompen, Newwester, Bonn McD. Sulfate
and Lakes Harry Hawkins, VKRYH, 37 Con-try, New Cosmock, Western, W. H. Billion,
J. W. Stander, W. W. Walter, W. Walter,
Yang, Eastern Selberts: Don Konch, VKRNN,
Yang, Eastern Selberts: Don Konch, VKRNN,
Harry Fowell, VKRAH, Russell Ave, Walternong; St George Chan Cept. WKRYK.

TOTOTA

President: G. S. C. Semmens, VK3GS Becreiary: C. Dyer (VK3DY), 19 Collington Ave., Brighton (XA 6326).

Administrative Secretary: Mrs. S. May, Law Court Chambers, 191 Queen St., Melbourne. Meeting Night: First Wednesday of each month at the Radio School, Melb. Technical College

as use radio School, Melb. Technical College, VAXVW, 13 Sione St., Skawell; Soak Westers, VAXVW, 13 Sione St., Skawell; Soak Westers, Nett Basicars T. R. Tennant, c/o Victory Deatre, Telura, Far North West, M. Fülle, VKSOZ, Ol. Lemon Ave., Mildur: Easiers: Westers: C. Case, VKSACIE, Curmnign Ava, Sirchly, Strickly, C. Case, VKSACIE, Curmnign Ava, Sirchly,

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VESWI: Sundays, 1130 hours EST, simultane-ously on 2598 and 1198 Ec and re-broad-cast on 50 and 144 Mc. bands, Intra-State working frequency 7185 Ec. Individual frequency checks of Amaleur Stations given when VESWI is on the air.

WKWI: Sundays, 0000 bours EST, simultane-ously on 3750 KE, 7150 KE, 9453 KE, 524 Me and 144.138 Me. Prequency the control of the control of the control between the control of the control of the between the control of the control of the proadcasts, 7655 Ke, channel is used from 1000 to 1000 bours each Sunday se VKK query service to VKWII.

VESWI: Sundays, 1900 bours SAST, on 7186 Ec. Frequency checks sre given by VESDW by arrangements only on the 7 and 14 Mc. banda

WESWI: Sundays, 0030 hours WAST, on 7198 Ec. No frequency checks available. VKTWI' Sundays, at 1000 hours EST, on 7196 Kc. and 146.5 Mc. No frequency checks are available.

QUEENBLAND President: J. H. Farrell, VK4WJ.

Secretary: J. F. Pickles, VKAFP, Box 638J, G.P.O., Brisbane. Meeting Night: Third Friday in each month at the LRE Rooms, Wickham St., Valley. Bivisional Sub Editor: Clive J. Cooke, VK4CC, Kuran Street, Chermside, Brisbane,

SOUTH AUSTRALIA

President: E. A. Barbier, VK5MD. Secretary, G. M. Bowen, VKSXU, Box 1234K, G.P.O. Adelaide. G.P.C., Adelaine.

Meeting Night: Second Tuesday of each month
at 17 Waymouth St., Adelaide.

Bivisional Sub-Editor: W. W Parsons, VKSPS,
10 Victoria Avenue, Rose Park.

WESTERN AUSTRALIA President: J. Campbell-Watson, VKSJW.

Secretary: H. B. Long, Box N1002, G.P.O., Meeting Place: Perth Technical College Annaxe, Mounts Bay Road, Perth. Meeting Night: Second Monday of each month

TASMANIA President: R. O'May, VKTOM

President: R. O'May, VKTOM.
Secretary: L. W. Edwards, VKTLE, Box 371B,
CLD. The Control of the C

FEDERAL CORRESPONDENTS REQUESTED

The Federal Secretary has received a letter from W80EN which it is desired be published for any Australian Amsters who might be netrested in corresponding with Miss Conen. It read as follows—

2005 Evansdale Ave.,
Toledo 7, Ohio, U.S.A.

Deer Mr. Hull, the Radio Operator and his an an Amarana are in a man Amarana and the control of the Amarana and the sea writing to pen-pais in other countries, and being an Amarana Radio Operator I would be a manager than the countries of the countries and the countries and the countries and the countries and the countries in the LARU. Self-operators or the countries in the LARU. and advised me to countries in the LALEU. Service will be a sensor in I am 18 years old and will be a sensor in high school this fall. At the present I am operating on the lower frequencies running low power, and I have not contacted any other

operating on the lower frequencies running tow power, and have not conflicted any other.

I wonder if you would know of any Amsterla from the 25 years old, that would be interested in any information on this and hope to hear from you soon. Until then, the very best 7% and DXI.

Sincerely yours.
Signed: MISS CAROLYN CONEN.

FEDERAL CONSTITUTION ALTERATIONS Federal Executive, on behalf of the Federal Council of the W.L.A., hereby gives notice that it is intended to after the Federal Constitution of the W.L.A. (as amended 1947)

Section 21 as follows: By deleting the words "within 50 days immediately preceding" and inserting in lieu thereof "80 days prior to." meering in Bett thereof "or days prior to." Section 28 as follows: (a) Deleting the words "the Headquarters" in lines three and four, and inserting the word "any" in Hest thereof; and (b) deleting the words "the Headquarters" in line 1, and inserting the word "appropriate" in Hea thereof.

SILENT KEY

It is with deep regret that we record the passing of:-VK5NM-Mal Mayer, July, 1951.

N F D. CONTEST. 1951

Our apology to both gentlemen, and we trust VKSWI will appreciate that the mistake was purely an error in adding. Thanks!

NEW SOUTH WALES EASTERN SUBURBS

EASTERN SUBURESS

City and suburban sizes correspondents evidently prefer to remain silent, judging by the almost complete lack of exposure to efficient animal complete lack of exposure to efficient fore, little or nothing covering the big smoke and exvisuas appears in "A.R.," this sub-efficient responsibility.

"I have been a suburban to the control of the suburban to the proposition of th

THE REPORT OF THE PROPERTY OF W.I.A. ACTIVITIES CALENDAR September 1-29: The Jubilee Relay

October 13-14: VK-ZL Jubilee Contest (C.W. Section). October 29-21 VK-ZL Jublice Contest (Phone Section). Tem. Dick, and Barry will resp the hreads AATE has "refere out" on 14 Me., attached the F Mc. first love keeps on dragaing him back; Bare is resting a centra-fed antenna statuto on 14 Mc. DX with good results. Iven ITN has been struggling with a 144 Mc. Tush-the tuning range. They vanished when the 713 described were replaced by an accom tricke; good describer was replaced by an accom tricke; good describer was replaced by an accom tricke; good

the control of the co and am card graces most c.w. Dx men's con-tion. He is particularly well known in ' on 28 Mc phone. Wal 25A dropped in for yarn and threatened to break out on v.h.f.

NORTHERN SUBURRS

NORTHERN SUBURDAY

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WESTERN SUBURBS

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NORTH COAST AND TABLELANDS

NORTH COAST AND TABLELANDS
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of Zone Officer for the shows case. Crieff 25C0
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elsars in the cone—let Noel have the news.
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1884 the selection—The Driving cot 1887 so that

144 Mc sctivity—2EA trying out 807s on that band, successfully operating 807s in parallel triode connected, with 40 watts at 400v, in a long lines excillator circuit, Keith massed on triode connected), with 40 watts at 400v, in a long lines oscillator circuit, Keith passed on the news on 40. EPA. ZAEY, ZWC, ZAWS, ZXO and ZAMH obtaining 30! Rx's for conversion to 144. There will soon be a net on the North Coast and we would like the city boys to look out for us when we get going.

out for its when we get florits. The new buttless when the per which we can be comed to the per buttle wing (wo element beam on 40. 20C, #W. A.S.D AAHI and JIW. Duttlen out solid signals contacts to Sydney ZAHE expecting TAID modulator unit to arrive from Sydney for the per solid per s

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DEATH OF TELEGRAPHY PHONEER

Mr. Arthur Sheard, one of the early pioneers of morse telegraphy in Australia and an acknowledged master of the technique of sending and receiving morse, died in the Calvary Hospital, Adelaide, re-

Born at Numurkah, Victoria, he learned telegraphy in W.A. at the end of the last century. Mr. Sheard held many records for speed and accuracy. He could send and receive morse messages at the same time, and could receive and transcribe two messages at once

From Darwin he went to Ade-laide on the G.P.O. staff in 1928. Mr. Sheard served in World War as a telegraph operator, and once was able to defeat German intelligence by sending and re-ceiving messages so fast that they

could not read them. After his retirement in 1940, he served as an R.A.A.F. instructor in morse at Parafield. He also in-

structed the S.A. Police.
Arthur Sheard, better known as " was the code instructor for the VK5 Division classes, and was instrumental in a large number of the boys getting their tickets, both Amateur and Commercial. He was well liked and took a sin-cere interest in all his pupils. He is survived by three sons, Keith of Perth, Denis of Dunedin, N.Z., and Arthur of Graymore,

er extertaining eventing. Thanks to EXT and XVI. for taking 2AM alongs, Hunner Branch Contest Committeeman Harold ZAMA, repeats the challenger issued on belief to the VK-ZL Jubilee DX Connert. that is, Funder Branch three top noone to beat three you up is die, section of the contest of the

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SOUTH COAST AND SOUTHERN

SOUTH COAST AND SOUTHERS.

SEVENTHING IS in hand for a big rell up from this most for the Riv Contest—it should be a LAFP has his new Tx working and will contest has been as the same by working three hands in the Contest same by working three hands in the Contest of the conditions on the DX hands, I think the general contest of leaves the conditions on the DX hands, I think the generation and the DX hands, I think the conditions on the DX hands, I think the conditions on the DX hands, I think the conditions on the DX hands, I think the conditions of the DX hands, I think the conditions of the DX hands, I think the conditions of the DX hands, I think the DX hands have been also been also

his words, "Volumble assistance was forthcoming from several stations." How I envy that guy, from several stations." How I nobody ever seems to bein me Nabody ever seems to help met

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VICTORIA

CENTRAL WESTERN ZONE The Annual Zone Convention will be held at The Annual Zone Convention will be held at the Annual Zone Convention will be held to eating programme has been arranged—se will be tooking forward to seeing many of the votee in person. If you require accommodation with the programme of the votee in person. If you require accommodation Avenue. Arrant 1920n. Arrant 1920n, not later than Tuesday, 11th September, as accommoda-tion is not pentiful.

Frogramme: 1200 hours assembly at Ararat Town Hall, 1300 lunch, 1430 hidden transmitter hunt, 3912 Ko., 1430 end of transmitter hunt, open envelopes, 1700 back to Ararat Town Hall, 1700-1800 competition and ragsbew, 1800 tea, 1800 annual meeting, presentation of prizes, taikte, and home to bed.

The transmitter bunt prize is three ministure tubes, in addition a further prize for the first zone member to locate the Tr. Also there will be a prize for the best piece of home-built equipment. This will be selected by ballet of those present. There tubes were donated yeelf Clark, and the other two prizes by Gor-Gord Clark, and the other two prizes by Gor-

don Weynton.

3HL has a cunning way of getting goar built, simply invites another Ham for a week or so and presto, latest willing victim was JARL who re-built the control system to single conwho re-built the contral system to single con-trol. Lin's anterna busing unit tried consistent.

In's anternal busing unit tried consistent with spectacular and noisy results. ITA is very busy on commercial projects at present, has held the fig. 3YW tried a little transmitting minus prints results. MTR is at last gettine places with a 14 Mc. beam. Tresor has the lower with a 14 Mc. beam. Tresor has the lower has the lower has the lower fig. 3ATO, Mere is located in Heraham about four doors from Byron, welcome to the rainko Old and let's hope you keep class.

to the ranks OM and Mrk hope you keep ciest of bell at last petting near the finish of the new fix the petting near the finish of the new fix, then off to 18 Mc with the sash as Jim has about had it en 7 Mc , SARIM is after doops on Clamp modulation, so Bob will be also believed to the controlled and the fixed that the controlled and fixed the controlled and fixed the controlled and fixed the controlled and fixed that the DON'T FORGET. Argrat Convention on 16th September. Zone hook-up, Sunday, tember, 1000 hours on 7155 Kc approx 9th Sep

NORTH EASTERN NOTES

The night preceding the convention BIT has the preceding the convention BIT has the preceding the convention BIT has the preceding the precedi

A.O.C.P. Well fellers. I'm sorry you feel that way, but cotton wool is cheap. Many thanks to Alan for his diligent concentration in mak-ing me make the grade. Andy I think you will have a cobber Cheers and 73's till next month.

EASTERN ZONE

Tem gin EASTERN ZONE

Tem gin ye had been a home-bree
deshibe conversion its working very intended
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sign as yet hobe parama JADA is with the RAAF somewhere in VKS and would very much like to hear from the born in the root. Here his to hear from the born in the root. Here his law to the law of the

SOUTH WESTERN ZONE

3AGD has been having trouble with floods and lost portion of his weir. 3II has new movie projector now and flood it much better than cranking the old one by hand. Lelgh has a heater in the shack and is on a little more often. JAKR thinking seriously of associon of the allowed the shack and the shack and the one of the shack and the



A 7 Valve Super-het, using modern miniature valves. It has a frequency coverage of 522 k.c. to 30 m.c., incorporating the Eddystone mains filter unit giving maximum noise reduction.

For Personal Use! Simple tuning controls with direct frequency reading on main dial. Special device fitted to prevent high initial surges when switching on. Usable on 110, 200 and 230 volts A.C. or D.C.

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Amateur Radio, September, 1951 Page 14

though Pat does a lot of listening. Heard a signal on 40 signing JAMM, couldn't possibly have been you, could it Hill? Was in Warnamhool the other day and met up with Norm SEQ; Norm says that the boys there have been very inactive. Frank 3ZU has been ill; hope that when you read this Frank, you are sparking

GEELONG AMATEUR BADIO CLUB GELIONG AMARUE RADIO CLUB
There was a good muster of members at the
first meeting of the month and many things
arrangements were under way for the visiting
of a couple of new places during the year. At
it is expected to be a successful year for the
club. During September a visit from the Moorthe members at for the last A.O.C.P. exam.
and it is hoped that they will be successful,
thus adding two more to the Geeling Hama.

QUEENSLAND

News seems very scarce this month. In addition only one lot of country zone notes have been received due, no doubt to the fact that the country rep. 4UM is now in the country himself and is unable to take news for me on himself and is unable to take news for me on Me. hook-up. Anyhow. I wish to tell you of the schleyement of two Brisbane Amaleurs as a result can lay claim to some very hardwon certificates. After reading of their splendied efforts stone of ut may be templet to equal you who can do so already, if so what about letting me know?

istitute non know!

The first of these Amateurs is 677 who does more literature than transmitting and just more more and the property of the p

Rever Rows.

To 4HPA credit we list the following Empire To 4HPA credit we let the load GREAC COMMITTEE TO A CO

IGNOM Africal.

Incidentally, I heard a good one shoul Thely, Incidentally, I heard a good one shoul Thely, Incidentally, I heard a good one should be heard a new one and after waiting five a love to the state of the should be a similar to the state of the should be a similar to the state of the state of the should be a similar to the state of the should be a part fine has to GWI in a furry because the single should be a similar and a Convergencity. They missed out on the should be a similar and a convergency to they missed out on the should be a similar to the should be should be a similar to the should be s

MARYBOROUGH NOTES BY 4GH 4KG should have his boat in the water soon. Then perhaps some Ham Radio, 4AI seldom heard. Building up some new gear including a g.d.o. 4GH converted Class C Wavemeter

into v.f.o., with T9 xtal note. Still has broken hand in plaster. Comes of punching the key too bard' 48G re-appeared on 49, indicating that Hernembrance Day Contest is in the offer-ing. Conditions poor on all bands during July though Europeans coming in again early a.m

CLARGE CORNER

SDL, who is on transfer to this State, is operating under the call sign of 4GP from his QTR at Hill Street, Cooper's Plains. Welcome to manay Queensland Don. 4YA is at present in the Brithson General Houghtal and latest reports indicate he is on the mend. Here's wishing you a speedy recovery Bill and hope we

47N left Brishane on the 28th July and should by now be settling down in his new Q7H. At the last W.I.A. needing, Frank was presented with a very nice crystal salad bowl and dish by the Queensland Division in appreciation of the good work done by him in the past.

LM looks like going off the air temporarity, being cramped for space to heate the rig. May-herd cramped for space to heate the rig. May-herd Cramped for space to heate the rig. May-herd CCC suggesting to one of his overseas triends he should spend his vaccition on acque word to like the Vank who arrived in Acres and said "Now I is rare DX," Clive. Have you cover looked down the barrel at a gun, pulled rever looked down the barrel at a gun, pulled That's how 48Te beam works. John works them the long way round off the back.

----SOUTH AUSTRALIA

The monthly general meeting of the VK2
The monthly general meeting of the VK2
capacity suddence and took the form of a fineresult. The general resulting the districtionstream of the meeting the distriction of fines that the meeting the distriction
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only to be expected. About?

A recognised exchange look which is printed as the comment on current redio affairs, this comment on current redio affairs, the make: Today, a long number of experimentary are better than the control of the comment of

Our evereshle and revered President with the golden repealest. There Barbére &MD, has been spending a portion of his recreation saws at Mount Gambier and no doubt meeting all the local gang. He has, no doubt, been selling the local gang. He has, no doubt, been selling vantages of the v.hf. a vol all and undry, and his XTL het, without question, been discussing the well known "May" brand of "Tottles."

5CH apart from skeds on 2 and a few contacts on 30 and 40, is leading what may be termed a quiet life. What, no power house Claude 5MS is another one who may be termed as somewhat quiet, but nevertheless Staart has managed to rake a couple of new countries is and also several long yarms with John Sheard

(ex-SJA) at present in England. SFD is in the throes of shifting into a new home, and as I can speak from experience, needless to say John is decidedly off the air.

SMC is thinked to building a 20 metre beam partial and the same of the same of

5CJ is still without a modulation transformer, although Colin has obtained a couple of 813s and is getting a bit tired of gazing longingly

DEPARTMENT OF EXTERNAL AFFAIRS ANTARCTIC DIVISION

SUPERVISOR RADIO OPERATOR, GR. 1

Wanted, Supervisor Radio Operator Gr. 1 for each of the Australian Scientific Stations at Heard and Macquarie Islands.

Applicants should state any appropriate licence or technical diploma held by them. Thorough knowledge of practical electronics essential

They will be required to service and maintain radio, radiosonde and rawind equipment at the Australian Scientific Station at Heard or Macquarie Islands and to act as Senior Wireless Telegraphy Operator.

Salary range £728 to £764, plus special hardship allowance. Period of stay approximately twelve months.

Applicants should be young. healthy and interested in outdoor activities, such as walking, ski-ing, mountaineering, etc.

Full details on application to the Secretary, Antarctic Division, Department of External Affairs, Albert Park Barracks, Albert Park, St. Kilda, Melbourne, Victoria.

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were now may be come the control of the control of

TASMANIA deeveur to maintain the high standard of occu-ing for which this Division is noted. Bed luck "Doc" trust things will be OK for the ZL Contest. Saw TLL the other week looking very happy, having just returned from a two months' tour of the Barrier Reel in the ketch "Matthew Flinders"

merce of the graph of the control of

soul ger and to the VRX Division from whom the gers was purchased. One recent Sundy constituted of 1918, 790, 78X, 7120, 7008, 18A, and not forgestum 170M, Sounded like old time, and not forgestum 170M, Sounded like old time, 72D having trouble with Rx and Tx. Trust Don himps trou out OK and congestualisties on 170 having trouble with Rx and Tx. Trust Don himps through the recent of the recent plants of the recent of the recent plants of the recent plants of the recent local constability. Don, together with 78M, attain, TRM can be heard bowling the ZL over on 40. RAL QML with business, but you Power cuts at TRM have restricted operation. can bet Tem will be available on 11th August. Prowe cuts at TRV have restricted operating time. Seen in lower since his return from his actions in the north was "smorty" Prevail, other pastines having priority on his time. Mentioned TCA still carrying on the good work Mentioned TCA still carrying to the good work pointly fars. The still settine depicts here building worsten, believe Jest has cerviled in a brick laying course. Suggest you take over lower than the still setting the still setting

Results are to hand of the Portable Field Day Contest and comprehistors to the Big. Day Contest and comprehistors to the High Day Contest and Contest. Unfortunately generated results contest, Unfortunately generated results caused considerable delay and property of the Contest of the Contes

NORTHERN TASMANIAN ZONE

NORTHERN TARMANIAN ZONE

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HAMADS 9d. per line, minimum 2/-.

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FOR SALE.—Eddystone "640". Condition as new, £60 or best offer. K. Echberg, 14 Glyde St., Mosman Park,

FOR SALE—Receivers: AR8 (A.W.A.) RA1B (Bendix) 0.15-15 Mc., BC454 3-6 Mc. Sell séparately or the lot. Perfect condition. Offers: I. Jay, 6 Ballater St., Essendon, Vic. (FX 8000).

SELL.—New, boxed, R.C.A. 829B £5.

SELL -97 feet 300 ohm ribbon (unused); 85 feet 70 ohm å inch co-ax (slightly used). R. Jones, 25 Panoramic Road, North Balwyn, E.9, Vic.

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WANTED TO BUY .- Circuit or Handbook for Marconi B28 Receiver, Admir-alty No. W2835E. Raiph Clark, 13 French Ave., Bankstown, N.S.W.

WANTED.—Two 455 Kc. Variable Selectivity I.F. Transformers manufactured by Hammarlund Co., U.S.A., as spares for Super-Pro Receiver. Must be spares for Super-Fro Receiver. Must be in new condition. Will pay 30/- each or swap "Q Plus" Car Radio Coli Kit with IF's. (new). J. E. Rogers, 61 Broadway West, Yallourn, Vic.

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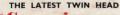


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K | K|T A Dusi Wave Assembly incorporating permeability tuned Aerial and Oscillator Coils for B/C (550-1600 Ke) and S/W (7-23 Mc.). Trimmers and Padder (fixed) Condensers Ritted. Iron Trimmers and l'adder (fixed) Condensers nited. Iron Core Adjustment is made from above chassis (the Trimmers from beneath). Suitable for "H" and A.W.A. gang. Measurements: 2j" long, 3j" wide, 1j" high. Available for Converiers 618, 688, ECH35, EK2, ICG' 'Oak" type Switch built in with 3" long by j" shaft.

K2 KIT R.F. Dual Wave Assembly. Permeability fron-cored both B/C (550-1600 Kc.) and S/W (7-22 Mc.) Coils. Special cadmium sub-chassis with A.W.A. Air Trimmers, fixed Mica B/C and S/W with A.W.A. Air Trimmers, fixed Mica B/C and S/W Padders fitted. All assemblies pre-aligned on special tester before leaving the factory. All Coils treated with Trollial. A.V.C. resistors and condensers, decoup-ling resistor in R.F. stage. Easy and comprehensive colour code and aligning instruction sheet supplied.

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